B U L L E T I N

of the

United States Institute for Textile Research, Inc.

Vol. I October, 1931 No. 8

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Secretary's Temporary Office
65 Franklin St., Boston, Mass.

T. R. I. BULLETIN

An Official Publication of
United States Institute for Textile Research, Inc.

Vol. I October, 1931 No. 8

OUR LATE PRESIDENT

In the passing of Dr. Samuel W. Stratton the textile industry has lost a leader who clearly envisioned one of its greatest needs--scientific research. But it has gained, as a result of his constructive leadership, a well-rounded plan for cooperative research in the United States Institute for Textile Research, Inc., of which he was president and to which he gave generously of his ability and time during its initial year.

One of his last public appearances, following his return from a European trip, was at a meeting of the directors of U. S. Institute, Oct. 15th, in Boston, when arrangements for the annual meeting, Nov. 5th, and plans for the new year were discussed. He expressed himself as highly gratified with the progress that had been made by the organization in the face of trying business conditions, and repeated his prediction that the needed financial support would be forthcoming as soon as the Institute shows some definite research accomplishment of practical value to the industry. Three days later, while dictating a tribute to the memory of his friend Edison, he slumped in his chair and was dead.

Dr. Stratton's interest in the textile industry and its research needs dates from that period of his career when, as director of the U. S. Bureau of Standards from 1901 to 1923, he was creating the greatest research organization in the country. Through the textile laboratories of the Bureau he was brought into intimate contact with this branch of the industry and came to understand its lack of fundamental technical knowledge. Failure of the industry to take adequate advantage of the Bureau's textile research facilities, despite notable accomplishments during the world war, was a disappointment that merely stimulated him to similar endeavor, when, as president of M. I. T., he organized its division of industrial cooperation and research.

Again the textile industry was much slower to respond to the opportunity for scientific research than other leading industries. Meantime he had the satisfaction of witnessing a steadily increasing demand from the textile industry for trained research men to direct private laboratories, and it was the training and making available a supply of research workers for industry that was one of his major activities as president of M. I. T., and through which he was confident that the resistance of practical industrialists to scientific research would be broken down ultimately.

The proffer of the presidency of U. S. Institute for Textile Research, Inc., came to him just after he had resigned as president of M. I. T., and had been elected chairman of its board of directors, with increased time for outside activities. This voluntary effort of research-minded men within the textile industry to organize for scientific research appealed to him as an opportunity to realize a long pent-up ideal that he could not afford to turn down. Undoubtedly he also regarded it as an opportunity to link up one of the country's largest industries with M. I. T.'s expanding program of scientific research for industry.

Since his acceptance of the presidency of U. S. Institute in November, 1930, he has given the organization bounteously of his advice, direction and time with the result that, in everything but financing, the textile industry now has

a cooperative research body permanently organized, with a research program planned and in operation through cooperating laboratories.

To that extent Dr. Stratton's service to U. S. Institute and to the textile industry was completed at his death. It remains for his colleagues and for the industry to take full advantage of the foundation that he has laid, and to build thereon an adequate textile research structure. There could be no more fitting memorial of Dr. Stratton's life work than the rejuvenation of a great industry through scientific research.

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The Annual Meeting

Call for annual meeting of members of U. S. Institute was mailed Oct. 22. For the convenience of both New York and outside members and to economize time it was decided not to convene the meeting at 10 A. M., as specified in the by-laws, but to make it a luncheon meeting starting at 12:30 P. M. in Room A of the Chemists' Club, 52 East 41st St., New York City.

The Board of Directors will meet in the morning, and, to ensure legality of the change in hour of the annual meeting of members, your proxy has been requested to be voted at the morning meeting in favor of adjournment to 12:30 P. M.

Following the annual meeting a meeting of the Board of Directors will be held for the election of officers and the transaction of other routine business.

In deference to the known wish of our late President the tribute to be rendered to him at the annual meeting will be the more impressive because of its briefness.

In addition to the tribute to Dr. Stratton's memory the features of the meeting will be an inspiring address on research by Dr. Charles Holmes Herty, and a report by Chairman Emley of the Research Committee descriptive of a useful completed piece of research.

The program for the meeting has been planned in accordance with our late President's directions, and it was his hope that it would prove sufficiently interesting to cause many members to invite guests who might be prospective candidates for membership.

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Dues are Due

Members are allowed by the by-laws 60 days from October 1 for payment of dues, but it would be a gracious tribute to the memory of our late President, and an inspiration to those who are left to carry on if your Treasurer could report at the annual meeting, November 5, "all dues paid."

At this writing the percentage of contributing membership ($100) renewals is much greater than those of annual memberships.

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REPORT OF RESEARCH COMMITTEE TO EXECUTIVE COMMITTEE
Oct. 15, 1931.

Since the last meeting, more or less progress has been made on the ten problems assigned, as follows:

Nothing has been done on No. 6.- Design of equipment to insure equal tension in all of the plies of a yarn or cable--because of Mr. Taylor's resignation as chairman of the sub-committee to which this problem was assigned.

Plans have been completed for No. 1.- Scientific study of the wear of fabrics and development of measuring resistance to wear; No. 3.- Study of the causes of shrinkage of fabrics, beginning with the volume change of fibres; and No. 5.- Autographic crimp tester.

Work is under way on No. 10.- Hysteresis in hygroscopic properties.

Work has just been completed on No. 9.- Torsion balance yarn numbering scale.

Reports are being prepared on No. 2.- Investigation of the relative suitabilities of the present methods of testing yarns; No. 4.- Development of testing methods for the fastness of dyes; No. 7.- Laundering effects on fabrics; and No. 8.- Fatigue resistance of textiles under compression. Since these are designed primarily to be used in Dr. Edwards' book, the manuscript will not be required until January.

The ten problems listed above were selected from 17 which were considered at the June meeting of the Research Committee. These 17 were part of a list of 70 problems which had been presented for consideration.

Major Groups of Research Problems

At the October meeting of the Research Committee the other 53 problems were brought up for discussion, but it was decided to proceed on a different basis. Our entire field of work was divided into a few major groups. On this basis the following problems have been selected and are recommended for solution:

Group 1. Evaluation of Raw Materials, and Their Preparation for Use.- The fibrous raw materials as delivered to the textile manufacturers contain impurities, which must be removed before the fibres can be processed. Are the present methods for estimating the quantities of impurities adequate for the purpose? Are the present methods for removing the impurities the best that can be used: i. e., do they remove substantially all of the impurities without undue injury to the fibres, and at a minimum cost?

Answers to these questions must be based upon an accurate detailed knowledge of the chemical and physical properties of the fibres and the impurities. Our present knowledge is not sufficient for the purpose.

Group 2. Improvement of Laboratory Technique.- Measurements of color, luster, and opacity are of commercial importance, and equipment and technique should be developed for the purpose. Greater use of polarized light and of stains can extend the field of usefulness of the microscope. X-ray equipment suitable for the study of textiles should be standardized so that it can be more generally available. Standards of fastness of dyes should be based upon reproducible spectro-photometric measurements.

Methods for the quantitative chemical analysis of organic materials are no longer adequate. We should be able to estimate the major constituents of the textile fibres with the same assurance as that with which the inorganic analyst can estimate the quantities of lime or silica.

Group 3. The Properties of Fibres.- The physical and chemical properties of the fibres per se are included in Division 1. Here we are concerned with the relation between the properties of the fibres and their usefulness.

What is the "spinning quality" of a fibre? Upon what does it depend, and can it be expressed numerically, so that fibres can be compared?

The same questions may be asked about felting quality.

What are the chemical reactions between the fibres and the various chemicals with which they are treated during the manufacturing process, including bleaching and dyeing?

How are the properties of the fibres affected by exposure to heat, or light, or air?

Why do fibres absorb water, how do they hold it, and what affect does it have on the dimensions, flexibility, strength, and other properties of the fibres?

Group 4. The Properties of Yarns.- The stress strain relations of all kinds of yarns, as affected by their construction, previous history, and present condition, should be known.

Group 5. The Properties of Fabrics.- We should study the manner in which fabrics wear out, and develop an accelerated test method which can be used to predict their durability.

What is the relationship between the design of the weave and "fabric assistance?"

What is the best construction which can be used to make a fabric having certain special qualities, such as low shrinkage, high tear resistance, low permeability to air?

Group 6. Textile Machine Design.- Have the builders of textile machinery taken full advantage of recent developments in new alloys?

What are the principles underlying spinning and weaving, and are the machines at present in use properly designed to carry out these operations to the best advantage?

Have the lubricants for textile machines been properly selected, with regard to efficiency of operation of the machines, and to their effects on the fabrics?

Group 7. Economics of Textile Manufacturing.- Control of humidity in a textile mill affects the fibres in a way to permit increased production. It also affects the hazard from fire caused by static electricity and it affects the productive ability of the operators. All such factors should be evaluated and balanced against the cost of installation and operation of the necessary equipment.

Group 8. Finishing Processes.- The principles underlying dyeing and bleaching are included in Group 3.

Fabrics are finished under more or less tension, at a greater or less temperature, and at a greater or less alkalinity. All of these factors affect the properties of the finished fabric.

Group 9. Consumers' Test Methods.- Consumers are interested in some properties which cannot be measured by the test methods ordinarily used. A method should be developed for measuring "handle", or "draping quality". The "cleanability" of a fabric, and whether it should be laundered or drycleaned, are questions of importance. What is the safe ironing temperature? How lustrous is the fabric, and how fast are its colors?

Cooperative Group Research Recommended

In each of the above groups there is a large number of individual problems. Some of these are already being investigated. Work on others can be undertaken on a cooperative basis with research laboratories. It would be helpful if the Institute could secure financial support from interested groups to assist in this cooperative research. A research associateship can be established at any one of a number of laboratories for $2,000 a year. This will provide one man to give full time to the problems selected, under the close supervision of the director of the laboratory.

Need and Value of Research Abstracts Service

Under present conditions, the first three months of the associate's time would be spent in studying the literature. This time could be reduced to a minimum if the central office of the Institute had a complete file of abstracts of textile literature. The value of such a file to every member of the textile industry would be literally inestimable. We are constantly facing what to us are new problems. If we could go to the office of the Institute and ascertain in a day everything which others have done on these problems, we would find that 99 per cent of them are not new. The direct savings which could be brought about by the use of such a file of abstracts makes the cost thereof seem insignificant. It is recommended that the Institute finance the creation of a file of textile abstracts.

Respectfully submitted,

Warren E. Emley, Chairman,
Research Committee,
Oct. 15, 1931. U.S.Institute for Textile Research, Inc.

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ABSTRACTS

CELLULOSE ACETATE.. II (continued) MODIFICATION OF VISCOSITY.- P. Chaumeton and V. E. Yarsley.
British Plastics, Vol. 2:407, Feb., 1931. (For previous studies see Monthly Abstract Bulletin, 17:34, 165, 239, January, March, April, 1931.)

The variation with time of the viscosity of acetone-soluble cellulose acetate is very slight, but the addition of benzene or lower aliphate alcohols generally increases the tendency of the solution to gel. Solutions of primary acetates show a definite increase in viscosity on keeping, but the effect is less with secondary acetates. The variation in viscosity with the nature of the solvent, and the effect of addition of a polar solvent such as water or methyl alcohol to the solution, are treated in detail, and also from the theoretical standpoint. The origin of the cellulose used for making solutions of the acetate is stated to play an important part in determining the viscosity characteristics of the cellulose acetate solution. (Copied complete from Eastman Kodak Co. Abstract Bulletin, Sept., 1931.)(S)

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THE BIOLOGY OF THE SILK WORM.- H. Doehner.
Melliand Textilberichte, Vol. 12-8, Aug., 1931, P. 501-503.

A short article illustrated by five excellent photomicrographs descriptive of the development of the silk worm and physiological aspects of its silk spinning equipment. (S)

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ENZYMES AS SILK DEGUMMING AGENTS.- H. H. Mosher.
The American Silk Journal, Vol. I-10, Oct., 1931, P. 57-60, 62.

Conclusion of the material by the writer published in the American Silk Journal. It was found in this study that the rate of sericin removal from raw silk by the enzymes, pepsin, trypsin, papain, bromelin, and the bacterial, proteolytic ferments Korofor and Serazyme are dependent upon four factors; namely, time, strength of solution, temperature and hydrogen-ion concentration. A number of graphs are given illustrative of the variation of these factors. (S)

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CELLULOSE ACETATE: VISCOSITY AND TENSILE PROPERTIES.- P. Chaumeton and V. E. Yarsley.
British Plastics, Vol. 2:452, March, 1931.

The tensile properties of cellulose acetate products, although capable of being modified by the action of plasticizers, binders, fillers, etc., are largely dependent upon the cellulose acetate itself. Tensile strength is associated with a degraded product, and is not directly proportional to its viscosity. Evidence is given which appears to show that tensile properties are bound up more with the actual orientation and linkage of the micellar particles of the solution than with their size upon which viscosity is largely dependent. (Copied complete from Eastman Kodak Co. Abstract Bulletin 17:9.)

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LENGTH AND FIBRE THICKNESS IN VARIOUS WOOLS.- J. A. F. Roberts.
Journal of the Textile Institute, Vol. XXII-9, Sept., 1931, P. T441-T455.

It is stated that the fineness of individual length groups is a far better index of a difference as it would appear to the sorter, than is the simple figure of average fineness. The data would seem also to show that fibres of different characteristics are well mixed on the skin.

There seems to be no reason to suppose that the coefficient of variability of fibre weight as estimated from a single small lock differs appreciably from the coefficient calculated from a zoned sample taken from a relatively large mass of wool. Twenty-six tables and a chart are included.(S)

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PRACTICAL STEREOSCOPIC PHOTOMICROGRAPHY BY MEANS OF A SINGLE OBJECTIVE LENS.- E. Cuzner.
J. Photomicrographic Soc., Vol. 15:29, Symposium number with Proc. 192701930.

An enumeration is given of the methods for obtaining stereophotomicrographs at various magnifications with brief comments on the required apparatus. (Copied complete from Eastman Kodak Co. Abstract Bulletin, Sept.,1931.) (S)

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MONTHLY WOOL GROWTH STUDIES.- Robert H. Burns.
Journal of the Textile Institute, Vol. XXII-9, Sept., 1931, P. T456-T464.

A continuation of work by the writer, concerned in this case with Hampshire Down ewes and Corriedale ewes. It is stated that (1) monthly wool growth in Rambouillet and Hampshire Down ewes showed a tendency to be uniform throughout the year, as shown by monthly and seasonal growth, and the total yearly wool growth tended to be the same during the four years of the experiment.

(2) Wool grows slightly more (average difference 9%) during the first six months after shearing than during the succeeding six months completing the year.

(3) The Corriedale ewes showed much more variability in monthly and seasonal wool growth than the Rambouillets and Hampshires. (S)

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THE FRICTIONAL PROPERTIES OF COTTON MATERIALS.- John A. Morrow.
Journal of the Textile Institute, Vol. XXII-9, Sept., 1931, P. T425-T440.

Most of the previous work on friction has been concerned with the measurement of properties likely to be of use to the engineer. A list of "coefficients of friction" is usually to be found in an engineering handbook, but the values are only approximate, and are intended to serve merely as rough guides to the relative magnitudes. For the engineer no more is required, for the coefficient of friction is important only in bearings, where it must be small, and in brake linings, where it should be large.

The coefficient of friction is defined as the ratio between the force required to produce sliding of one surface on another (the tangential force) and the force holding the pair of surfaces together (the normal force). Experiments on the friction of pairs of hard solid substances have shown that this ratio is nearly constant, being independent of the pressure, the area of contact, and the rate of relative motion of the surfaces.

Very little is known about the actual cause of friction, but it is possibly due to some form of intermolecular attraction. Before this friction, which is usually implied in the term "Coefficient of Friction," can be measured, it is necessary to have the surfaces under test in a highly polished state. Should they not be so, the property that is measured will be a complex mixture of the molecular friction, the resistance to tearing, imperfection of elasticity, and the extent of irregularity of the surfaces in question. The simple laws of friction, referred to above, then cease to hold, and the measured quantity will depend both on the pressure and the area, and may vary in quite a complicated way with any change in the surface conditions.

Probably for this reason very little work has been done on the frictional properties of textiles. Among the few references that are available may be mentioned some by Balls in his book "Studies of Quality in Cotton", and a paper on the measurement of yarn friction, by Krumme. In addition to the rarity of smooth polished surfaces in textiles, the area and the regularity of the surfaces are affected by changes in the normal forces. If two cloths, for instance, are placed face to face, there will be a certain amount of interlocking of projecting hairs even with no normal force, while the area of contact is not at all definite. The area, however, would be expected to increase as the pressure became larger, and consequently the coefficient of friction could not be independent of the pressure unless it

were also independent of the area.

The result of all these varying factors is to make it impossible to define the frictional coefficient as a simple physical constant for any given pair of substances. The most that can be done is to measure it under some standard conditions, and then investigate the effect of all the factors that are likely to affect it. Actually, of course, this is the way in which all physical constants are measured, but in practice only those in which atmospheric conditions, previous history, etc., are not important are given as constants. An instance of the unsatisfactory state of our knowledge of friction is shown by the fact that, given the frictions of a pair A and B and another pair B and C, it is not possible to predict what will be the value for the pair A and C.

The coefficient of friction as defined above really includes three different quantities--the static, simple kinetic, and viscous frictions. In static friction the sliding force that is required to start the motion is measured, and this does not involve the speed. Simple kinetic friction is that usually found between dry polished solids in motion, and is independent of the speed once motion has started. Viscous friction is that most commonly met with in fluids, and increases with the first, second, or higher power of the speed; usually, however, with the first or second. In textiles all three frictions may be present together, so that the problem of measuring them is very complex.

In this paper the results of a large number of measurements of hair and yarn friction are given, together with a summary of experiments on cloth friction. The paper is divided into three sections dealing with the friction of hair upon hair, and of yarn and cloth against various surfaces. The methods of measurement adopted are necessarily different, and the sections have, therefore, been kept separate.

As was expected, the friction has been found to be affected by many factors--the pressure, the area of contact, the relative speed, and the state of the surfaces, the temperature, and the relative humidity. When only the first two factors vary there is a general relationship of the form. $F = mP + kA$ between the tangential force F, the area of contact A, and pressure P.

The measurement of hair friction has given indications that the coarser cottons have a larger friction coefficient, but the results obtained are not decisive. As with yarn friction, a large effect due to moisture has been found.

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BIBLIOGRAPHY

44th ANNUAL MEETING OF THE ASSOCIATION OF GERMAN CHEMISTS AT VIENNA, May, 1931. (Sub-Committee on the Chemistry of the Dye and Textile Industries.) Melliand Textilberichte, Vol. 12-8, 1931, P. 521-524.

The article consists of brief abstracts of 10 papers presented at the meeting, several of which were concerned with bleaching, several with dyeing and one on the identification of raw silk fibre. (S)

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ACTION OF CAUSTIC SODA ON CELLULOSE.- S. M. Neale.
J. Soc. Chem. Ind., Vol. 50:177T, May 22, 1931.

This article deals with the activation of cotton mercerizing with caustic soda solution. (Copied complete from Abstract Bulletin 17:9 of the Eastman Kodak Co.) (S)

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ACETOLYSIS OF BAMBOO CELLULOSE.- S. Oguri and M. Nara.
J. Soc. Chem. Ind., Japan, Vol. 33:516B, Dec., 1930.

Comparison of the acetolysis products indicates that unless some distinguishing characteristic property is found, the celluloses isolated from bamboo stalks are chemically identical with cotton celluloses. (Copied complete from the Eastman Kodak Co. Abstract Bulletin, Sept., 1931) (S)

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PHOTOELECTRIC MICROANALYSIS.- M. Matsui and T. Noda.
J. Soc. Chem. Inc., Japan, Vol. 33:517B, Dec., 1930.

A brief description is given of a photoelectric colorimeter for microanalysis. (Copied complete from Eastman Kodak Co. Abstract Bulletin, Sept., 1931.) (S)

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MEASUREMENT OF COLOR OF TEXTILE FABRICS. VIII. RELATIONS BETWEEN CONCENTRATION OF DYESTUFF AND COLOR OF UNEXPOSED AND EXPOSED FABRICS.- P. W. Cunliffe and Miss P. N. Lambert.
J. Soc. Dyers Colourists, Vol. 47:73, March, 1931.

The relations between: (1) concentration of dyestuff and luminosity; and (3) luminosity of faded and unfaded dyeings, are described by means of tricolorimetric measurements. (Copied complete from Eastman Kodak Co. Abstract Bulletin, Sept., 1931.) (S)

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USE OF LIGHT FILTERS IN PHOTOMICROGRAPHY.- J. H. Pledge.
J. Photomicrographic Soc., Vol. 15:57, Symposium number and Proc. 1927-1930.

A brief discussion is given of the use of Wratten M filters in photomicrography. (Copied complete from Eastman Kodak Co. Abstract Bulletin, Sept., 1931.) (S)

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ROOM FOR STANDARDIZATION IN THE RAYON FIELD.- W. F. Edwards.
Textile World, Vol. LXXX-13, Sept. 26, 1931, P. 102-103.

A brief article, illustrated with rayon filament cross sections, pointing out the relative importance and adequacy of certain tentative standards set up by Committee D-13 of the American Society for Testing Materials. The writer's observation has convinced him of the adequacy of identification of four common types of rayon by the use of cross sections and the microscope. It is suggested that standardization of rayon yarns will not bring the greatest benefit to the industry using them until more care is given to standardization to some extent of the manufacturing operations which convert the yarns into fabrics. (S)

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HYDROGEN ION IN TEXTILE CHEMISTRY.
American Silk Journal, Vol. I-10, Oct., 1931, P. 55.

A brief outline of the applications of the Bausch & Lomb hydrogen ion colorimeter to such problems as the degumming of silk and measurement of impurities in water. (S)

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HARDENING AND FULLING IN PRESSED-FELT MANUFACTURE.- F. A. Hayes.
Textile World, Vol. LXXX-15, Oct. 10, 1931, P. 56-59.

The second of a series of articles discussing the manufacture of pressed-felt. The present article is of interest because of a brief discussion of the theory of felting. It is, however, somewhat incompletely stated and lacks sufficient data to be of much value. (S)

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TRAVELER WEIGHTS AND YARN TENSIONS DURING SPINNING.- Carl D. Brandt.
Melliand Textile Monthly, Vol. III-7, Oct., 1931, P. 560-561.

Part One of a series of articles dealing with the mechanical and graphical solution of the tensions set up in yarn by varying the weight or size of travelers during spinning. Description is given of the motor test and the resulting characteristics--rate of change of slip, power factor, efficiency, and input as compared with horse power output at varying loads. (S)

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CONTROL IN TEXTILE MANUFACTURING.- William King.
Melliand Textile Monthly, Vol. III-7, Oct., 1931, P. 557-559.

The first part of an article discussing some of the principles employed by successful mills in carrying out practical research. The author discusses the value of experimental machinery, research in purchasing, in production, and in personnel matters. (S)

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RESEARCH AIDS IN DEVELOPMENT OF ALL RAYON AND MIXTURE FABRICS.- Carl C. Mattann, Jr.
Textile World, Vol. LXXX-13, Sept. 26, 1931, P. 96-98.

The author points out that an efficiently organized department for studying and testing fabrics, having the sincere and earnest support of the mill creating it, is becoming more and more necessary as an aid to meeting the rapidly growing demands for new fabrics. (S)

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TEXTILE MARKETING, A NEW COURSE AT LOWELL TEXTILE INSTITUTE.
Textile World, Vol. LXXX-12, Sept. 19, 1931, P. 29.

A brief statement of a Sales Option Course four years in length which is to include courses covering the fundamental principles of advertising, salesmanship, marketing research, control, planning, foreign markets, statistics, styling and merchandising as well as business administration. (S)

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STUDY OF CORK ROLLS FOR COTTON SPINNING.- H. H. Willis.
Textile World, Vol. LXXX-12, Sept. 19, 1931, P. 36-37.

It is stated that this article, although brief, is the most adequate substantiated presentation of the case yet seen. The writer states that cork rolls as compared with leather cost 4 cents less per spindle per year on the basis of length of life, produce a slightly stronger yarn, increase production, lower spinning costs and reduce the number of slubs resulting from roll changes. (S)

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A NEW GERMAN FIBRE PLANT--THE YUCCA.- K. Roos.
Melliand Textilberichte, Vol. XII-9, Sept., 1931, P. 561-563.

The first part of an article largely concerned with the chemical analysis of Yucca fibre as compared with flax, hemp and jute. (S)

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ALKALIES AND WOOL.- A. W. Davidson.
The Hunter Counselor, Vol. V-4, Oct., 1931, P. 6-14.

The writer points out that the general effects of alkalies upon wool is an interesting study in that they make a good servant but a hard master. It is pointed out that it is the hydroxyl ion which usually produces harm to the wool fibre. The use of glycerine in a mercerizing bath of high concentration increases the tensile strength and improves the product. (S)

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COLOR, ITS APPEARANCE AND MEASUREMENT.- Frederich C. Jacoby.
Melliand Textilberichte, Vol. XII-9, Sept., 1931, P. 586-588.

A paper presented at the Congress of the International Federation of Textile Chemists and Colorists meeting in May, 1931 at Paris. The first part of a continued article dealing with a three dimensional system for the identification and measurement of color. (S)

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THE BOILING OFF OF VEGETABLE FIBRES WITH AND WITHOUT PRESSURE.- Gustav Ullmann.
Melliand Textilberichte, Vol. XII-9, Sept., 1931, P. 577-581.

A paper presented at the 16th Congress of the International Association of Chemists and Colorists held in Paris, May, 1931. The paper is largely a review by the writer and a number of German and French chemists. Nine references are given. (S)

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THE STEP-PHOTOMETER AS AN AID TO TEXTILE CHEMICAL RESEARCH.- H. Sommer.
Melliand Textilberichte, Vol. XII-8, Aug., 1931, P. 531-532.

A continuation from Vol. XII-7, P. 472 of a discussion of the applications of the new step-photometer manufactured by Zeiss and concerned largely with its application to problems of bleaching. The article is continued in the September number and further installments are to come. (S)

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OXYCELLULOSE FORMATION AND ITS INFLUENCE UPON THE STRUCTURE OF COTTON FIBRE.- Haller.
Melliand Textilberichte, Vol. XII-8, Aug., 1931, P. 517-518.

A brief review of the reactions of oxycellulose with a number of reagents, reviewing principally work by the writer and Hess. An abstract from a paper presented at the Congress of the International Association of Chemists and Colorists which met in Paris in May, 1931. (S)

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RESEARCH IN FLAX YARN FINISHING.- G. Neumann.
Melliand Textilberichte, Vol. XII-8, Aug., 1931, P. 508-510; Vol. XII-9, Sept., 1931, P. 568-572.

Part II of an article discussing research on the sizing of flax yarn, illustrated with numerous excellent photomicrographs. Several formulae and one chart are also included. The next section deals with several additional formulae and continues with a discussion of the machinery necessary to finish the material. This includes a detailed description of an experimental machine. The article is to be continued. (S)

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STUDIES IN THE NAPHTOL A.S.-GROUPS WITH THE AID OF LUMINESCENCE OF NAPHTOLATE.- Otto Mecheels (with the assistance of Hans Koppert and Rudolf Schule)
Melliand Textilberichte, Vol. XII-9, Sept., 1931, P. 581-583.

An article descriptive of the study of these materials in ultra-violet light and by day-light. (S)

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